BOTANICAL GAZETTE.

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VACCINIUM MACROCARPON, var. INTERMEDIUM.—This name may be given to a form which occurs on the Columbia River, is probably that which in Hooker's Flora is said to occur at its mouth, and is collected higher up, in Washington Territory by Mr. Suksdorf, who sends both flower and fruit. When two very nearly related species occur over a wide range in latitude, the assigned differences are apt to fail at some place or other. The form of Cranberry which Mr. Suksdorf supplies has the stature, small leaves, and small berries of *V. Oxycoccus*. In about half the specimens the scaly bud for the inflorescence is leafy-proliferous, in the others not so, thus destroying a character which appeared to distinguish the two species. On the other hand there is in northern Japan and Sachalin a larger leaved plant which I referred to *V. macrocarpon* and Maximowicz to *V. Oxycoccus*, the bud of which is sometimes proliferous; and its larger leaves equal in size those of ordinary *V. macrocarpon*. They have, however, the slight apiculation which renders the leaves of *V. Oxycoccus* acutish in appearance; while in the Columbia River plant the apex of the leaf is almost retuse. To this small point is reduced the only absolute difference between the two.—A. GRAY.

EPIPACTIS HELLEBORINE.—We have from the Secretary of the Syracuse Botanical Club the following note from Dr. Hooker:

"Mr. Dyer has given me your note reporting the *Epipactis Helleborine*, var. *viridens*, which you have been so good as to send. I am really very much interested in this discovery which on various accounts is an exceedingly important one. It shows a connection between the American and European flora of the rarest kind; another instance being the *Spiranthes Romanzoviana*, and a third, *Eriocaulon septangulare*. Another curious point is that your plant should talk with us of the European varieties of the species, that species being so variable a one, that, *a priori*, it would have been expected that the North American form should have differed from all the European ones! This shows a persistence of very subordinate and what are supposed to be variable characters, of a very remarkable kind."—

JOS. D. HOOKER.

GRAY'S BOTANICAL TEXT BOOK.—The small edition which was printed in June last having been exhausted, a second issue has been published, bearing the date of 1880. In it various typographical errors and small oversights have been corrected. The author will be obliged to botanists who use the book to point out any errors they may detect, that they may be hereafter corrected.

COMMON AND TROUBLESOME WEEDS NEAR SANTA BARBARA, CAL.—Mrs. Bingham, of Sta. Barbara, California, being asked what were the most common and troublesome weeds in that region, responds as follows:

"The most persistent weed, in cultivated grounds, is *Malva borealis*, which grows sometimes eight or ten feet high. It dies during the dry season, where the ground is not irrigated, but whenever the ground is moistened for a few hours, the seeds will germinate.

Solanum nigrum grows everywhere, blooming and bearing fruit the year round; very difficult to eradicate and troublesome.

Brassica nigra covers thousands of acres of pasture land, rendering it almost entirely worthless.

The old Californians have a legend, that when the country was ceded to the United States, the Catholic Fathers were so enraged that they determined to curse the ground, and so scattered broadcast the Malva and mustard.

Stellaria media is abundant after the first rains. *Calandrinia Menziesii* is troublesome in wet weather. *Matricaria discoidea* is common. A variety of *Rumex* abounds in wet weather. *Verbena officinalis* is common in damp places all the year.

Lepidium nitidum is common. *Capsella Bursa-pastoris* grows sparingly in some places. *Datura meteloides* is common in some localities. *Silene gallica*, *Marrubium vulgare* and *Erodium cicutarium* are also common. *Erodium moschatum* and *Medicago denticulata* cover large areas and are valuable for pasturage. Along water courses *Plantago major* and *P. lanceolata* are seen in small quantities, and *Nasturtium officinalis* grows in large patches where the ground is moist. *Hemizonia fasciculatis* covers uncultivated grounds in dry weather and is very troublesome. Bees make a very poor quality of honey from it. In cultivated grounds in dry weather we have two varieties of *Chenopodium* and two or three of *Ambrosia*, also several other apetalous plants which I cannot name. *Eremocarpus setigerus* is very abundant in some localities in the dry season.

I have given you the most prominent troublesome plants, and if I was as good a botanist as I would like to be, might tell you more."

Similar information from other districts is solicited.—A. GRAY.

VISCIDITY AS A SEED-DISTRIBUTOR.—On a recent short botanical excursion with a thirteen year old son, he called my attention to a bunch of dried stems of *Cerastium nutans* which by his pocket lens he had discovered to be "covered with small lice sticking to the glands." These proved to be seeds, which, adhering in this way to the sticky stems, were thus blown to long distances, and widely distributed! We have had suggestions that viscid glands are for the purpose of absorbing nitrogenous matter,—for obstructing the advance of unwelcome guests,—possibly for some other purposes,—but I have never heard of the seed-distribution. We know that when a dead cat is placed at the root of a grape vine, the plant is often invigorated thereby, but we do not believe that cats were especially designed for grape vine roots, or the roots especially adapted for feeding on dead cats, though indirectly this may be so, and I fancy much of what we hear about "arrangements" in plant structure or behavior, amounts to but little more. Still it is always a gain to know the *fact*, whatever it may be, hence I send you this note.—T. MEEHAN.

NOTES FROM ST. AUGUSTINE, FLA.—I suppose that as I write, Oct. 21st, the collecting season is nearly over for northern botanists, while here the wild flowers are blooming in great profusion, and will continue to do so for two or three weeks longer. In ordinary seasons the last two weeks of November and the whole of December afford very little of botanical interest in this section. Nature seems to take a short rest, and January begins the season again with *Viola lanceolata*, *V. cucullata*, *Oldenlandia rotundifolia*, and perhaps *Pinguicula lutea*, *P. pumila* and *P. elatior*.

September and October of this year have been terribly rainy months, making collecting almost impossible. However, four or five days just spent at a "settlement" a few miles from St. Augustine, have yielded good returns. We passed one day, notwithstanding frequent showers, in voyaging over the pine-barrens in a Florida cart, going wherever there seemed to be anything worth gathering. The wet season had caused acres of pine-barren land to bloom with *Bigelovia nudata*, DC., while here and there the milk white corymbs and blossom-stems of *Cacalia ovata*, Walt. made that pretty flower very conspicuous. I saw three or four small specimens of *Hydrolea corymbosa*, Ell. although it is now late in the season for it. It is very beautiful with its bright blue corolla and filaments and golden anthers. There were immense, partially submerged patches of the aromatic *Herpestis amplexicaulis*, Pursh., the bright blue of its blossoms nearly

rivalling my pet *Hydrolea*. *Tiedemannia teretifolia*, DC., well named for its curious "terete petioles destitute of leaflets," delighted in the swampy condition of the country and was quite plentiful in some places, though nearly out of flower. *Gerardia purpurea* and a few late blossoms of *Erigeron vernum*, Torr. & Gray., showed themselves occasionally, while *Lobelia glandulosa*, Walt., raised its purplish-blue spike gracefully above the surrounding grasses and sedges. The exceeding brittleness of the stems of this plant makes it rather difficult to press good specimens. Before reaching the "Cabbage hammock" which was our goal, and where we proposed searching the *Sabal Palmetto* trees for *Polypodium aureum*, *Vittaria lineata*, and *Ophioglossum palmatum*, our horse forced the cart through a quarter of an acre of *Pontederia cordata*. The plants averaged four feet in height, and were in full bloom. Among the *Herpestis amplexicaulis* I saw two or three belated flowers of *Piriqueta fulva*, Chapm., and on the edge of the swamp *Kosteletzkya Virginica*, Presl., in blossom. The latter varies very much; in fresh water swamps the plants are generally not much branched and rather weak and diffuse in habit, with small leaves; while in brackish marshes they grow from four to six feet high, very stout, with large leaves. These leaves are strongly rough-hairy, and when a person "rubs the cheeks with them to get a good color" the stinging sensation lasts several minutes. When we reached the "hammock" we fastened the horse, and then carefully picked our way from one comparatively dry place to another, jumping from knoll to knoll or from root to root. Not a fern of any kind rewarded our search, except the common *Polypodium incanum*. Two or three mosses, whose names I do not yet know, were in good condition for collecting, and while looking about for others I spied what seemed to be a flower stem from which all the petals had fallen. I soon saw that it was an orchidaceous plant which I had never seen, and analysis proved it to be *Microstylis Floridana*, Chapm., assigned in the "Southern Flora" to "Apalachicola, Florida" as its habitat. It has two pretty green ovate leaves, and a slender raceme of small curious flowers. The plant is easily overlooked, but a careful search enabled me to secure about thirty good specimens. We found nothing else of special interest in this place, and soon entered the cart upon our return voyage over the watery barrens. Again we pass through masses of yellow *Bigelovia*, and presently reach a place where there are a number of plants of the bright *Coreopsis gladiata*, Walt. This plant is very graceful as it swings its slender stem to and fro in the breeze, showing its deep yellow ray-flowers to good advantage. As we come out

upon high dry sand ridges, we find a brilliant show of fall flowers. Of these one of the most beautiful is *Petalostemon corymbosum*, Michx. which grows plentifully on two or three especially dry ridges. Each root sends up a large cluster of simple stems which are about two feet high, each stem crowned with a corymbose spike of white flowers. One interesting peculiarity of this flower is the calyx, the "teeth" of which are "setaceous, plumose." In the days when my botanical knowledge of Florida flowers was very small, these same plumose teeth puzzled me very much, for they deceived me, and made me try to place the plant in the Compositæ family. When my blunder was pointed out by a kind friend, and I read Wood's description of this species in his "Class Book of Botany," how I thanked the author for his remark that the "heads resemble the *Compositæ*, with red scales, and lance-oblong petals." *P. carneum*, Michx. resembles *P. corymbosum*, but the solitary heads are rather larger and fewer, and it is readily distinguished by other characteristics. *P. gracile*, Nutt., grows in the wiry grass of the barrens, and sometimes it is necessary to find the roots by tracing the diffuse, perhaps nearly prostrate stems from the flower heads to the root, carefully picking away the tangled grass. The lengthened head of this Petalostemon gives it the common name of "Thimble-top." One especially dry place, where the earth is chiefly pure white sand is the only locality of which I know for *Gaillardia lanceolata*, Michx. The plant is quite peculiar in its aspect with its few small leaves and large flowers. The ray-flowers are yellow above and red on the under side, while the disk flowers are a very dark purple, nearly black. *Liatris elegans*, Willd., is a striking ornament to the "piney woods," with its brightly-colored flower-bracts. Some spikes are two feet long and an inch or more in diameter, while an occasional stem has been "topped" by accident and has sent out four or five small spikes. This majestic Liatris is truly elegant, and well deserves its name. Two other handsome species are *L. gracilis*, Pursh. with its slender spike of deep purple flowers, and *L. spicata*, Willd., with its large spike of bright light-purple blossoms. The "Florida vanilla," *L. odoratissima*, Willd., is just out of blossom. I saw one flower stem, which was over five feet high; the usual height is about three feet. Several low, wet places were full of *L. paniculata*, Willd., and I suppose that a little farther south, *L. fruticosa*, Nutt., will soon be in bloom. I have never seen it near St. Augustine, but last year while going down to the Halifax river in December, I saw plenty of it just out of bloom. All our species, except the last three, have tuberous roots, and *L. fruticosa*

is shrubby. We passed gay patches of pink *Gerardia filifolia*, Nutt., and yellow *Seymeria tenuifolia*, Pursh; stray plants of *G. parvifolia*, Chapm. all tangled up in the grass; bright golden-yellow *Chrysopsis decumbens*, Chapm. and *C. trichophylla*, Nutt.; pretty white heads of *Palafoxia integrifolia*, Torr. & Gray; black rayless heads of *Helianthus Radula*, Torr. & Gray with its pretty rosette of four large root-leaves lying flat upon the ground; a species of white *Sabbatia*, and two or three varieties of bright yellow "wild sun-flowers." Where the barrens had been burned over, that sure follower of the fire, *Hypoxys juncea*, Smith, had sprung up, and was already in bloom. In rich muddy places especially near houses, *Scoparia dulcis*, L., was an untidy weed. Another of our beautiful fall flowers, *Polygonella parvifolia*, Michx. was just coming into bloom. This tiny delicate flower is very dainty and attractive. It grows in short racemes which make a crowded panicle. The sterile flowers are generally of a pure white color, while the fertile are a yellowish green or bright pink. This *Polygonella* makes a pretty addition to grass boquets, as it keeps its color and remains secure upon the stem. Of the many other plants that we saw, I have only room to mention *Siphonychia diffusa*, Chapm. This is a very pretty plant; the prostrate stems form mats upon the ground, and the tiny pinkish-white flowers are in numerous "compact, rectangular cymes, terminating all the branches."—

MARY C. REYNOLDS.

NEW SPECIES OF FUNGI, BY CHAS. H. PECK.—ÆCIDIUM MONOICUM.—Spots none; peridia generally crowded, occupying the whole lower surface of the leaf, subcylindrical; spores subglobose, bright-yellow, .0008–.0011 of an inch in diameter, generally with one to three shining nuclei; spermogonia on different leaves of the same plant.

Leaves of *Arabis retrofracta*. Colorado. *T. S. Brandegee*. Communicated by *E. A. Rau*.

From the notes of Mr. Brandegee we learn that early in March when the host plants begin to grow, those affected by the fungus begin to look sickly. They soon turn yellow and never blossom.

ÆCIDIUM POLEMONII.—Spots suborbicular, pallid or greenish-yellow, sometimes confluent; peridia hypophyllous, crowded, short; spores globose or subelliptical, bright orange, .0008–.001 of an inch in diameter, minutely rough; spermagonia central on both sides of the leaf.

Leaves of *Polemonium reptans*. Iowa. May. *E. W. Holway*.

ÆCIDIUM GILIÆ.—Spots pale-yellow; peridia scattered or crowded, short, pustuliform, hypophyllous, rarely also epiphyllous, opening

by a small aperture; spores orange, angular or subglobose, .0008–.001 of an inch in diameter, generally with one to three shining nuclei.

Leaves of *Gilia Nuttallii*. Alta, Wasatch Mts., Utah. August. Altitude 8,000 feet. *M. E. Jones.*

ÆCIDIUM INTERMIXTUM.—Peridia scattered, hypophyllous, short; spores subglobose or elliptical, orange-colored, .0008–.0012 of an inch broad.

Leaves of *Iva axillaris*. Green River, Wyoming Territory. July *M. E. Jones.*

This occurs in company with *Puccinia intermixta* of which it is probably a form. In some instances the *Æcidium* was on the lower surface of the leaf and the *Puccinia* on the upper surface, in others both were intermingled on the lower surface.

CENANGIUM PLATASCUM.—Cups small, clustered, at first with a white margin, then plane and black margined; asci numerous, ovate or subspherical; spores oblong-ovate, fenestrate, slightly colored, .0008 of an inch long, .0005 of an inch broad.

On bark. Alabama. *T. M. Peters.*

SPHÆRELLA MEGASTOMA.—Perithecia minute, numerous, amphigenous, at first covered by the epidermis, then erumpent, black; ostiola large, circular, pale within; asci subcylindrical; spores uniseriate or sometimes crowded, oblong-elliptical, granular within, greenish-yellow, .0004—.0006 of an inch long.

Living and languishing leaves of *Astragalus bisulcatus*. Colorado. July. *M. E. Jones.*

This fungus appears to attack the leaves while living and to cause their death.

THE COLORADO BERBERIS.—One dislikes to call attention to errors upon the pages of so excellent a book as the Botany of Lieut. Wheeler's Surveys, but in that work one plant is given as "common in the mountain parts of Central Colorado," which, I venture to say, does not occur in Colorado at all, *i. e. Berberis Aquifolium*, Pursh. I have seen acres of that shrub in the mountains of California, but after six seasons of botanizing in different parts of Colorado, I have to say that I never met with it here. *Berberis repens*, Lindl., which Dr. Rothrock says he did not see, is common enough in the mountains of Colorado. This very different species, formerly considered a variety of *B. Aquifolium*, was so designated in the earlier catalogues of Colorado plants; but since the specific rank which it merited has been conceded to it, the name of *B. Aquifolium* should be dropped from the Rocky Moun-

tain list, unless some one can show a specimen of that species from the region in question.—EDWARD L. GREENE, *Creswell, Colorado.*

THE MICHIGAN TRILLIUM described in the July number of the GAZETTE I have found here several times, and always associated with *T. grandiflorum*. Judging by the company it keeps I long since regarded it as only a freak of *T. grandiflorum*. During the spring specimens of it were sent to me from Lockport, N. Y., by Prof. A. B. Evans, and afterward that gentleman informed me he had again found it, and that it grew from the *roots* of *T. grandiflorum*. It is not entitled to rank as a variety, being, as Mr. Smith says, a *lusus naturæ*.—
S. H. WRIGHT, *Penn Yan, N. Y.*

MELANTHIUM VIRGINICUM.—An article in a recent number of the BOT. GAZETTE on *Melanthium Virginicum*, brings to my mind that, about 12 years ago, it was abundant in this vicinity, but is now rarely seen. The reason of this is that the places where it grew have been cultivated and grazed so as to destroy it. This summer I found it May 1, in Greenwood Co., Kansas, very abundant on a southern exposure on sandstone hills. Again after the middle of June I observed it quite abundant on line of Missouri and Kansas at west line of Cass Co., Mo., apparently having just bloomed.—G. C. BROADHEAD, *Pleasant Hill, Mo.*

THE FLOATING FERN.—It was announced a year ago that sterile specimens of the *Ceratopteris thalictroides* had been found in Southern Florida. I am now able to offer complete specimens of this extraordinary plant as part of my fourth fascicle of Southern plants, and also of a fascicle of twelve Floridian Ferns which I have prepared to meet the wants of numerous applicants. The specimens for these sets have been prepared with much care, nearly all having roots, without which specimens of Floridian ferns are quite incomplete. The giant *Acrostichum* is represented by sections of the sterile and fertile fronds.

The *Ceratopteris* being extremely variable, I shall give two or three plants for a specimen and in each specimen shall endeavor to illustrate its peculiar mode of propagation, which is by marginal buds, exactly as in *Bryophyllum*. These arise from old sterile fronds, very rarely from fertile ones, the latter being erect, while the former mostly float. From Prof. Eaton's article relative to this fern it would be inferred that the *Ceratopteris* roots like *Sparganium* and *Pontederia*. Where I found it, somewhere in the vast inundated prairie region north of the Everglades, it was floating free (exactly like *Pistia* and

Azolla) in water ten feet deep. The fronds are arranged in rosettes, each having roots of its own. The young ones are central, of the usual crosier shape and the spongy stipes bear a few hyaline, cup-shaped scales.

Cheilanthes microphylla I have not found in a second locality, although I have explored 200 miles of the eastern coast of Florida pretty thoroughly. In October I revisited its station and found it much better developed than last year, when the weather was extremely dry. I secured all the fruiting specimens and will distribute them. I decline to make selections of less than 100 specimens, except in the case of these twelve ferns, which are put up in uniform sets, with printed labels, and sold for $1.20. For packing and postage 30 cents additional is charged on any number of sets sent to one address.—

A. H. CURTISS, *Jacksonville, Fla.*

FERN ETCHINGS by John Williamson, author of FERNS OF KENTUCKY. Louisville: John P. Morton & Co. Ed. 1.—A little more than a year ago appeared the modest "Ferns of Kentucky" illustrated by lithographic plates transferred from etchings by Mr. Williamson, the author of the work. Many of these plates were quite excellent and still more showed that had the original copper plates been used the results would have been much more satisfactory, as the delicacy of the etchings were lost by the process of transferring.

Mr. Williamson himself seems to have appreciated this fact, for in his new work we have the etchings themselves, printed in most cases in a very beautiful manner.

The volume, which is about 8x10 inches, contains plates of sixty-eight Ferns, natives of the United States, which is about one-half of the species known to inhabit this area. The description of each species will be found opposite the plate and has been taken from the works of Prof. Gray and Prof. Eaton. The very best of the plates of the "Ferns of Kentucky" are used in this volume, but these are but few. By far the larger portion are entirely new, while the others are the same species as in the former book from vastly improved plates. It would be impossible to select any particular plates to mention as best, for all are so perfect. The smaller species of ferns are of course best represented, as the entire plant can be brought within the compass of the page. The larger ferns are excellent but it is to be regretted that they should not have been etched on larger coppers, as the excellence of the portions of them which are given creates a desire for the whole.

Plates 1, 5, 9, 15, 17, 36 and 50, representing the smaller ferns, and plates 10, 13, 31, 35, 40 and 52, representing the larger growing species, seem to possess superior excellence. In fact many of the plates of this book would be eagerly seized upon by the virtuoso if met with among a collection of etchings, as a great prize. Mr. Williamson is a man who does this work, not because he desires to emulate the work of eminent botanists, but because the ability to do it is in him and he can but allow it to manifest itself. Mr. Williamson's occupation and circumstances are such that he does not possess the leisure time which is often at the command of the amateur to spend upon the work he so much enjoys, making the result so much the more to be wondered at.

The volume before us is dedicated to a mutual friend of the author and the present writer, and it is with unfeigned pleasure that the latter commends the author's taste in selecting one to honor who, like himself, works against surroundings for the love of the branch of science in which he labors.

As the number of species represented is about one half of the known ferns of the country, and a second volume would include all, it makes the price of the volume, which is $7.50, very much less in proportion than is charged for the works usually met with occupying the same field, thus bringing it within the limit of many more persons than is generally the case.

It is to be hoped that the sales of this volume will be such as to warrant the completion of the work, and if such should be the case the public, and pteridologists particularly, would have a rare volume if Mr. Williamson succeeded in carrying it as far beyond the present one as this is superior to his first book, "Ferns of Kentucky," which, judging from his work thus far, he may do.—JOHN ROBINSON.

TENSION IN AN OAK.—Near New Birmingham, Ohio, is a good sized White Oak which furnishes so good an illustration of the tension of tissues that it is worth while noting. The tree had been cut into on one side, just fairly into the sap wood, and then left. Being exposed to a heavy wind it was so bent away from the cut side that the slab split up the tree some ten feet, its cut end slipping entirely out of its former resting place. The connection above was perfectly retained and hence the slab continued to live, projected at a small angle from the tree. The lower end, after slipping out from its support, has so elongated that it is now nearly two inches too long to occupy its former position. There has also been a healing up and barking over

of the cut end so that the overlapping seems to be exaggerated. In a young and growing plant if the pith and woody zone are separated the former will elongate and the latter contract and hence make quite an obvious difference. But elasticity is diminished in the older and more established parts of a plant, and to have such a difference between the layers of forming and permanent tissue in the wood is more than I looked for.—J. M. C.

FOURTEEN WEEKS IN BOTANY by Alphonso Wood, A. M., and J. Dorman Steele, Ph. D. (A. S. Barnes & Co., 1879).—The parts of Steele's "Fourteen-Weeks" series have not been remarkable for their accuracy of statement nor for peculiar aptness of presentation and the present volume fully sustains the reputation of its predecessors. We are not told whether the plan of the work was originated by Prof. Wood or Dr. Steele or whether it was produced by the combined wisdom of the authors. Certainly in its use they lay the book open to very severe criticism. Instead of presenting the subject in a logical way, the pupil is introduced at once to *Polytrichum commune* and *Bartramia pomiformis*, two mosses, under each of which is a very meager description. Following these are lessons on *Polypodium* and *Osmunda* in the order which is pursued throughout the book, Description, Analysis, Name, Classification with a list of terms defined in the section and with them the Cryptogams are dismissed. Seventy plants are thus described and from these, with an utter lack of treatment in any general way, a pupil is expected to obtain an idea of the science of botany. The technical terms, being defined only as they are needed in speaking of a particular species, are of course presented without any regard to their correlation. We take a list of these at random. "Aestivation, Albumen, Centripetal inflorescence, Herbaceous, Imbricated, Introrse, Opposing stamens, Pedicel, Pyxis, Quincuncial, Raceme, Rachis, Sessile, Tuber." (p. 43.) But we are told in the preface that the book "is not designed for infants; the rather for learners capable of thought and reason." Now is there any *reason* in thus mixing things in order to present them to learners "capable of thought and reason"?

Not content with veinlet, on page 21 we have the term *veinulet* introduced. We are also told that the genera *Cardamine* and *Dentaria* are one, taking the older name *Cardamine*. (p. 103) In speaking of hairs (foot-note, p. 104,) it is said, "In the Nettle they are hollow with a bag of poison concealed." Why not tell a reasoning pupil the exact truth which is more wonderful than this fiction? On page 116

the remarkable statement is made that "It will now be seen that from the leaf alone or any fragment of it, the place of the plant in the natural system of classification can be determined." Hardly, with the knowledge at the command of the ordinary pupil.

The casual observer will be at once struck with the extreme *floweriness* of the *style*. Under the description of the Dog-tooth Violet we read; "Spring has come again. The winds blow soft from the West and South over the melting snow-banks. Birds once more fill the air with song, while plants awakened from their winter's sleep, put on their robes of leaf and flower." (p. 29.)

"May, charming May, is the festival of the Roseworts." (p. 104.)

There is one excellent feature of the work, the extreme accuracy of the illustrations. This is not at all surprising when the names of the designers of the majority of the cuts are known, viz: Mr. Isaac Sprague, "the most eminent of living botanical artists," and Mr. J. H. Emerton, the delineator of many of the plates of Eaton's "Ferns of N. A." Some of the figures, however, are evidently by less experienced botanists. The drawings of *Sarracenia purpurea* (p. 159.) and *Pinus Strobus* (p. 215.) are certainly unique.

THE GAZETTE FOR 1880.—As the December and January numbers of the GAZETTE will probably appear very nearly together, this seems to be the suitable time to call attention to the beginning of a new volume. The GAZETTE will enter upon its fifth volume with renewed vigor and greater prospects of success than ever before. It will be the constant aim of the editors to make it as attractive as possible, keeping it in that middle path between dry technicalities that would appall the amateur and foolish quibbling that would disgust the professional. We offer no list of contributors, but would simply ask that the numbers of this volume be looked over with the assurance that there will be no falling off in this respect, but a constant advance. The subscription price will be continued at the same low figure and if a botanist is not willing to pay one dollar for 150 pages of such notes as the GAZETTE contains, he must be poor indeed. We would ask for the continued patronage of our old subscribers and urge them, if not for our sakes, at least for the common good, to increase the number of our patrons as far as they are able. No sample copies will be distributed at the beginning of the year, as has been the custom formerly, and no numbers will be sent after the subscription has expired. We urge, therefore, that all who expect to subscribe do so at once, that our list may be made and that there may be no awkward break at the beginning of the year. Remember also that if notes accompany a subscription it will be none the less acceptable.—EDS.